

***SUMMARY DATA FOR CASE 7B***

This section contains the following economic data for case 7B:

- Capital Investment and Revenue Requirement Summary
- Total Plant Cost

**CAPITAL INVESTMENT & REVENUE REQUIREMENT SUMMARY****TITLE/DEFINITION**

Case:	Ultra-Critical PC w/ CO <sub>2</sub>		
Plant Size:	367.4 (MW,net)	HeatRate:	10,999 (Btu/kWh)
Primary/Secondary Fuel(type):	Illinois #6	Cost:	1.24 (\$/MMBtu)
Design/Construction:	4 (years)	BookLife:	20 (years)
TPC(Plant Cost) Year:	1999 (Dec.)	TPI Year:	2000 (Jan.)
Capacity Factor:	65 (%)	CO <sub>2</sub> Removed	2,100,722 (tons/year)

**CAPITAL INVESTMENT**

	<b>\$x1000</b>	<b>\$/kW</b>
Process Capital & Facilities	581,835	1583.5
Engineering(incl.C.M.,H.O.& Fee)	34,910	95.0
Process Contingency	6,215	16.9
Project Contingency	91,036	247.8
<b>TOTAL PLANT COST(TPC)</b>	<b>\$713,996</b>	<b>1943.2</b>
<b>TOTAL CASH EXPENDED</b>	<b>\$713,996</b>	
AFDC	\$57,925	
<b>TOTAL PLANT INVESTMENT(TPI)</b>	<b>\$771,922</b>	<b>2100.9</b>
Royalty Allowance		
Preproduction Costs	19,906	54.2
Inventory Capital	6,677	18.2
Initial Catalyst & Chemicals(w/equip.)		
Land Cost	544	1.5
<b>TOTAL CAPITAL REQUIREMENT(TCR)</b>	<b>\$799,048</b>	<b>2174.7</b>

**OPERATING & MAINTENANCE COSTS (1999 Dollars)**

	<b>\$x1000</b>	<b>\$/kW-yr</b>
Operating Labor	5,272	14.3
Maintenance Labor	3,793	10.3
Maintenance Material	5,689	15.5
Administrative & Support Labor	2,266	6.2
<b>TOTAL OPERATION &amp; MAINTENANCE</b>	<b>\$17,021</b>	<b>46.3</b>
<b>FIXED O &amp; M</b>		<b>30.84 \$/kW-yr</b>
<b>VARIABLE O &amp; M</b>		<b>0.27 ¢/kWh</b>

**CONSUMABLE OPERATING COSTS,less Fuel (1999 Dollars)**

	<b>\$x1000</b>	<b>¢/kWh</b>
Water	279	0.01
Chemicals	10,612	0.51
Other Consumables	2,313	0.11
Waste Disposal	3,443	0.16
<b>TOTAL CONSUMABLE OPERATING COSTS</b>	<b>\$16,648</b>	<b>0.80</b>

**BY-PRODUCT CREDITS (1999 Dollars)**

<b>FUEL COST (1999 Dollars)</b>	<b>\$28,534</b>	<b>1.36</b>
---------------------------------	-----------------	-------------

**Levelized (Over Book Life \$)****PRODUCTION COST SUMMARY**

	<b>\$/ton CO<sub>2</sub></b>		<b>¢/kWh</b>
Fixed O & M	\$2.06	30.8/kW-yr	0.54
Variable O & M	\$1.20		0.27
Consumables	\$3.24		0.80
By-product Credit			
Fuel	\$3.72		1.36
<b>TOTAL PRODUCTION COST</b>	<b>\$10.23</b>		<b>2.97</b>

**LEVELIZED CARRYING CHARGES(Capital)**

	\$21.09	300.1/kW-yr	5.27
--	---------	-------------	------

**LEVELIZED (Over Book Life) BUSBAR COST OF POWER**

	\$31.32		8.24
--	---------	--	------

**ESTIMATE BASIS/FINANCIAL CRITERIA for REVENUE REQUIREMENT CALCULATIONS****GENERAL DATA/CHARACTERISTICS**

Case Title:	Ultra-Critical PC w/ CO <sub>2</sub>	
Unit Size:/Plant Size:	367.4 MW <sub>net</sub>	367.4 MWe
Location:	East-West Region	
Fuel: Primary/Secondary	Illinois #6	
Energy From Primary/Secondary Fuels	10,999 Btu/kWh	Btu/kWh
Levelized Capacity Factor / Preproduction(equivalent months)	65 %	1 months
Capital Cost Year Dollars (Reference Year Dollars):	1999 (December)	
Delivered Cost of Primary/Secondary Fuel	1.24 \$/MBtu	\$/MBtu
Design/Construction Period:	4 years	
Plant Startup Date (1st. Year Dollars):	2000 (January)	
Land Area/Unit Cost	340 acre	\$1,600 /acre

**FINANCIAL CRITERIA**

Project Book Life:	20 years	
Book Salvage Value:	%	
Project Tax Life:	20 years	
Tax Depreciation Method:	Accel. based on ACRS Class	
Property Tax Rate:	1.0 % per year	
Insurance Tax Rate:	1.0 % per year	
Federal Income Tax Rate:	34.0 %	
State Income Tax Rate:	4.2 %	
Investment Tax Credit/% Eligible	%	%
Economic Basis:	Over Book Lif Constant Dollars	
Capital Structure	% of Total	Cost(%)
Common Equity	45	12.00
Preferred Stock	10	8.50
Debt	45	9.00
Weighted Cost of Capital:(after tax)	8.76 %	
Escalation Rates	Over Book Life	1999 to 2000
General	% per year	% per year
Primary Fuel	% per year	% per year
Secondary Fuel	% per year	% per year

Client: EPR/DOE VISION 21		Report Date: 19-Sep-2000										
Project: INNOVATIVE POWER CYCLES		04:10 PM										
Case: Ultra-Critical PC w/ CO <sub>2</sub>		Estimate Type: Conceptual										
Plant Size: 367.4 MW.net		Cost Base (Dec) 1999 (\$x1000)										
TOTAL PLANT COST SUMMARY												
Acct No.	Item/Description	Equipment Cost	Material Cost	Labor Direct	Labor Indirect	Sales Tax	Bare Erected Cost \$	Eng'g CM H.O. & Fee	Contingencies Process	Contingencies Project	TOTAL PLANT COST \$	TOTAL PLANT COST \$/KW
1	COAL & SORBENT HANDLING	7,512	2,270	5,997	420		\$16,199	972		3,434	\$20,605	56
2	COAL & SORBENT PREP & FEED	9,431		3,075	215		\$12,722	763		2,697	\$16,182	44
3	FEEDWATER & MISC. BOP SYSTEMS	16,576		7,838	549		\$24,964	1,498		5,801	\$32,262	88
4	PC BOILER & ACCESSORIES	85,157		34,213	2,395		\$121,765	7,306		12,907	\$141,978	386
4.1	PC Boiler											
4.2	Open											
4.3	Open											
4.4-4.9	Boiler BoP (w/FD & ID Fans)											
	SUBTOTAL 4											
5A	FLUE GAS CLEANUP	37,542		21,847	1,529		\$60,919	3,655		6,457	\$71,032	193
5B	CO. REMOVAL & COMPRESSION	68,485		43,652	3,056		\$115,192	6,912	6,215	19,248	\$147,567	402
6	COMBUSTION TURBINE/ACCESSORIE	N/A		N/A								
6.1	Combustion Turbine Generator											
6.2-6.9	Combustion Turbine Accessories											
	SUBTOTAL 6											
7	HRSG, DUCTING & STACK											
7.1	Heat Recovery Steam Generator											
7.2-7.9	HRSG Accessories, Ductwork and Stack											
	SUBTOTAL 7											
8	STEAM TURBINE GENERATOR											
8.1	Steam TG & Accessories	49,409		8,527	597		\$58,533	3,512		6,204	\$68,249	186
8.2-8.9	Turbine Plant Auxiliaries and Steam Pipin	16,135	556	9,047	633		\$26,372	1,582		5,011	\$32,965	90
	SUBTOTAL 8	65,544	556	17,574	1,230		\$84,904	5,094		11,216	\$101,214	275
9	COOLING WATER SYSTEM	5,528	6,395	5,977	418		\$18,318	1,099		3,756	\$23,173	63
10	ASH/SPENT SORBENT HANDLING SYS	6,419	87	12,289	860		\$19,655	1,179		3,159	\$23,993	65
11	ACCESSORY ELECTRIC PLANT	12,232	4,535	14,209	995		\$31,970	1,918		5,508	\$39,396	107
12	INSTRUMENTATION & CONTROL	6,386		2,672	187		\$9,245	555		1,240	\$11,040	30
13	IMPROVEMENTS TO SITE	2,150	1,267	5,038	353		\$8,808	529		2,801	\$12,138	33
14	BUILDINGS & STRUCTURES		15,457	17,700	1,239		\$34,396	2,064		9,115	\$45,575	124
	TOTAL COST	\$335,326	\$31,394	\$201,042	\$14,073		\$581,835	\$34,910	\$6,215	\$91,036	\$713,996	1943